

REMARKS

In connection with the filing of a request for continued examination (“RCE”), the above amended claims and following remarks are submitted in response to the Final Office Action mailed on August 31, 2007. Claims 42, 44, 50, and 54 are amended. Therefore, claims 42-56 remain pending in the application. Reconsideration of the pending claims is requested in view of the above-amendments and following remarks.

I. Claims Rejected Under 35 U.S.C. § 112

Claims 42-56 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

The Examiner has rejected the use of the term “dispatch” as recited in the claims. In particular, the Examiner asserted that the meaning of the term “dispatch” is unclear in light of the Specification and the reasons presented by the Applicants in the previous Response dated August 2, 2007. The Applicants submit that the intention of the reasons presented in the previous Response was to illustrate that the term “dispatch” inherently discloses that previously dispatched instructions are to be executed, and not to redefine the term “dispatch” to mean “execute” as alleged by the Examiner. This reasoning is consistent with the definition of “dispatch” presented by the Examiner as meaning, “issue a fetched instruction to one or more functional units *for execution*” (emphasis added). From this definition, it should be understood that instructions sent to a processor will be executed, presumably, at a time after being dispatched. The usage of the term “dispatch” in the claims is consistent with this reasoning. Further, the Applicants amended the section of the Specification pointed to by the Examiner, namely page 9, lines 3-7, as allegedly redefining the term “dispatch” to clarify the usage of the term to be consistent with the above definition.

Accordingly, in light of at least these reasons, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims 42-56 under 35 U.S.C. § 112, second paragraph.

II. Claims Rejected Under 35 U.S.C. § 103

Claims 42-44, 48, 50, 51, and 53-56 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Stevens in view of U. S. Patent No. 5,999,989 issued to Patel (“Patel”). To determine obviousness of a claim: (1) factual findings must be made under the factors set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966); and (2) the analysis supporting the rejection under 35 U.S.C. § 103 should be made explicit and there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. See MPEP §§ 2141(II), 2141(III), and 2142; KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1396; see e.g., MPEP § 2143 (providing a number of rationales which are consistent with the proper “functional approach” to the determination of obviousness as laid down in Graham).

Claim 42, as amended, recites the elements of “executing a core module,” “initializing a plurality of firmware modules by the core module,” “dispatching an earlier of the two firmware modules by the core module and then dispatching a later of the two firmware modules by the core module,” and “invoking a function contained in a third firmware module by the earlier of the two firmware modules during a dispatch of the earlier firmware module or by the later of the two firmware modules during a dispatch of the later firmware module.” Support for the amendment may be found, for example, on page 7, lines 22-27, page 8, lines 13-23, and page 10, lines 12-15, of the Specification. The amendment also includes some of the elements as previously recited in claim 44. Stevens fails to teach or suggest these elements. The Examiner conceded (see page 4, item 7, of the Final Office Action) that Stevens fails to teach the elements of “invoking a function contained in a third firmware module,” as recited in the claim. Further, Patel fails to cure these deficiencies. Patel, instead, discloses that the POST routine initializes the option ROMs of each required device for booting the OS. See Patel, column 4, lines 51-54 and 61-66; column 5, lines 12-22, 33-36, and 58-60; column 6, lines 1, 2, and 39-46. However, Patel discloses that initialization of the option ROM is performed by invoking a call to code located *within the ROM itself* instead of “invoking a function *contained in a third firmware module* by the earlier of the two firmware modules during a dispatch of the earlier firmware module or by the later of the two firmware modules during a dispatch of the later firmware module” (emphasis added). See Patel, column 7, lines 14-16. Further, the Examiner’s characterization (see page 4,

item 8, of the Final Office Action) of the “earlier firmware module” as being equivalent to the POST routine is untenable because the POST routine is not a firmware module that is dispatched by a core module as required in the claim. For example, claim 42 recites the elements of “dispatching an earlier of the two firmware modules *by the core module* and then dispatching a later of the two firmware modules *by the core module*” (emphasis added). Instead, as discussed above, the POST routine *initializes the option ROM* (i.e., the firmware module) of each required device and, therefore, fails to satisfy the elements of “invoking a function contained in a third firmware module *by the earlier of the two firmware modules* during a dispatch of the earlier firmware module” (emphasis added). See Patel, column 4, lines 51-54 and 61-66; column 5, lines 12-22, 33-36, and 58-60; column 6, lines 1, 2, and 39-46.

Thus, in view of at least the foregoing reasons, Stevens in view of Patel fails to teach or suggest each element of claim 42. In addition, claims 43, 44, and 48 are patentable over Stevens in view of Patel because of their dependencies on claim 42. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims 42-44 and 48.

In regard to claim 50, among other limitations, this claim recites the elements of “determining dependencies among a plurality of firmware modules *by a separate core module* based on information about services imported and exported by each of the firmware modules *before* dispatching the plurality of firmware modules *by the separate core module*, and the services imported by each firmware module of the plurality of firmware modules *dispatched by the separate core module* are provided in another firmware of the plurality of firmware modules *dispatched by the separate core module*” (emphasis added). Support for the amendment may be found, for example, on page 8, lines 13-23, and page 10, lines 7-15, of the Specification. The Examiner conceded on page 5 of the Office Action that Stevens fails to teach or suggest these elements. The Applicants further note that Stevens’ dispatch manager initializes the computer by *sequentially* executing a *predetermined number of tasks* that, without more, indicates that determining dependencies among a plurality of firmware modules is not performed because the ordering of tasks is predefined (i.e., known ahead of time) in a fixed sequential order. See Stevens, column 2, lines 63-67; column 3, lines 4-6.

In addition, Patel fails to cure these deficiencies. Patel fails to teach or suggest the elements of “the services imported by each firmware module of the plurality of firmware modules dispatched by the separate core module are provided in another firmware of the plurality of firmware modules dispatched by the separate core module,” as recited in claim 50. For example, Patel discloses that the option ROM initialization code hooks an interrupt table entry to the interrupt service routine within the ROM so that the configuration software can find the service. See Patel, column 7, lines 19-25; column 8, lines 10-12 and 43-46. The Examiner also pointed to this section of Patel in the Response to Arguments section (see page 10, item 39, of the Final Office Action). However, it should be understood that the configuration software includes *the POST routine* responsible for initializing the device. See Patel, column 7, lines 11-13 and 43-47. The POST routine, however, is not a “firmware module of the plurality of firmware modules *dispatched by the separate core module*” that requires services “in another firmware of the plurality of firmware modules *dispatched by the separate core module*,” (emphasis added) as recited in claim 50. For example, the POST routine initializes the ROM, which in turn executes the initialization routines within the ROM. See Patel, column 5, lines 58-60. Therefore, the POST routine being able to locate the service within the option ROM (via the interrupt hook) does not disclose the elements of “the services imported by each firmware module of the plurality of firmware modules dispatched by the separate core module are provided in another firmware of the plurality of firmware modules dispatched by the separate core module,” as recited in claim 50 because the POST routine is not a firmware module dispatched by a separate core module. Thus, Patel fails to teach or suggest each element of claim 50.

Moreover, the Examiner in the Response to Arguments section (see page 10, item 38, of the Final Office Action) pointed to a section of Patel that indicates that another device driver may be used based on the device type code in the device ROM. See Patel, column 7, line 60, to column 8, lines 5. However, Patel discloses that this is accomplished by the *operating system*, which clearly indicates that using another device driver occurs *after the device ROMs have been initialized and the operating system has booted*, instead of “before dispatching the plurality of firmware modules by the separate core module” as required by claim 50. See Patel, column 15, lines 43-47; Fig. 2.

Consequently, in view of at least the foregoing reasons, Stevens in view of Patel fails to teach or suggest each element of claim 50. In addition, claims 51 and 53 are patentable over Stevens in view of Patel because of their dependency from claim 50. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims 50, 51, and 53.

Moreover, with respect to claim 50, the Examiner has taken Official Notice (see page 5, item 15, of the Final Office Action) that it is well known in the art to dispatch modules in an order based on dependencies, as the meaning of dependencies inherently involves an ordering. Although the term “dependencies” may indicate some sort of order, the Examiner is not entitled to extend the meaning of this term to teach what is claimed when the contrary is taught in Patel. Patel, instead, discloses that the initialization of devices is performed, first, on known devices and then performed on IPL devices, and, lastly, performed on devices required to load and launch the operating system. See Patel, column 5, lines 12-19 and 58-63. These tasks are accomplished without requiring any determination of *dependencies among the plurality of devices* (i.e., between each device to one another) because devices in Patel are initialized independently of one another based on the *type of device* (i.e., known devices, IPL devices, and OS devices). Thus, for at least these foregoing reasons, the Applicants traverse the Examiner’s taking of Official Notice.

In addition to the above foregoing reasons, as required by MPEP § 2144.03(A), Official Notice unsupported by documentary evidence should only be taken by the Examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. The Examiner cannot reach conclusions based on his own understanding or experience, or even through an assessment of what would be basic knowledge or common sense, and must point to some concrete evidence in the record to support his findings. See In re Zurko, 258 F.3d 1379 at 1386 (Fed. Cir. 2001). On page 5 of the Final Office Action (see item 15), the Examiner gives an example that the parent must come before the child as the basis for establishing that it is well known in the art to dispatch modules in an order based on dependencies. However, it is unclear what exactly a parent module in relation with a child module is suppose to entail based on the Examiner’s comments. Further, the relationship of a parent module to a child module to satisfy dependencies as alleged by the

Examiner is not disclosed in Patel. Therefore, because the Examiner's statement failed to point to any citation or evidence, the taking of Official Notice was equivalent to an assessment of basic knowledge and common sense not based on any evidence in the record and, as a result, lacks substantial evidence support. See Zurko at 1385.

In regard to claim 54, this claim, as amended recites the elements of "one of the two firmware modules is to initialize a hardware component that is not present in the system *by iterating through each of the plurality of firmware modules within the BIOS to determine whether the hardware component is present*" (emphasis added). Support for the amendment can be found, for example, on page 16, line 23, to page 17, line 20, of the Specification. The Examiner admitted on page 6 of the Final Office Action (see item 19) that Stevens fails to teach or suggest these elements. Patel fails to teach or suggest these elements as well. Patel, instead, detects, tests, and initializes *all known devices* in the system and then initializes any device required to boot the operating system after attempting to deactivate all known devices. See Patel, column 5, lines 12, 13, 20-25, 33-36, 58-60. However, since Patel already knows the devices in the system and simply deactivates all known devices, Patel fails to "initialize a hardware component that is not present in the system *by iterating through each of the plurality of firmware modules within the BIOS to determine whether the hardware component is present*," as recited in the claim. Thus, for at least these reasons, Patel fails to teach or suggest each element of claim 54.

Moreover, the Examiner in the Response to Arguments section (see page 10, item 40, of the Final Office Action) asserted that the system initially does not know whether the devices are present or not, which is why the devices are activated and deactivated to identify any additional devices. However, this is not what is taught in Patel. Patel, in contrast, teaches initializing and deactivating all devices that *the Post routine already knows about* to determine the devices required to boot the operating system. See Patel, column 5, lines 12, 13, and 20-25. It should be understood that, first, the POST routine initializes *all known devices* in the system. See Patel, column 5, lines 12, 13. Then, to determine which devices *of the known devices* are to be used for booting the operating system, the POST routine attempts to deactivate *all the known devices* (that were previously initialized) because devices needed to boot the operating system (i.e., IPL

devices) cannot be deactivated by software. See Patel, column 5, lines 20-25 and 35-39. The devices that were successfully deactivated (and already known) are then turned on. See Patel, column 5, lines 49-51. Patel supports this conclusion by disclosing that the BIOS isolates the devices to determine the resource requirements of the devices *before* activating and deactivating devices to determine which of these devices are required to boot the operating system. See Patel, column 6, lines 12-21. Therefore, these devices are *necessarily present* in order for the system to accomplish this task, rather than “not present in the system,” as recited in claim 54.

Thus, in view of at least the foregoing reasons, Stevens in view of Patel fails to teach or suggest each element of claim 54. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claim 54. In addition, dependent claims 55 and 56 are patentable over Stevens in view of Patel because of each of these claims depends on claim 54. Therefore, for at least these reasons, Stevens in view of Patel fails to teach or suggest each element of claims 54-56. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims 54-56.

Claims 45-47 and 52 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Stevens in view of Patel, as applied to claim 42, and further in view of U.S. Patent 6,353,924 issued to Ayers et al. (“Ayers”).

In regard to claims 45-47, these claims depend from claim 42 and incorporate the limitations thereof. Therefore, for at least the reasons mentioned in connection with claim 42, Stevens in view of Patel fails to teach or suggest each element of claims 45-47. In addition, Ayers fails to cure the deficiencies of Stevens in view of Patel. The Examiner has not cited and the Applicants are unable to discern the portion of Ayers that teaches the missing elements. Therefore, for at least these reasons, Stevens in view of Patel in further view of Ayers fails to teach or suggest each element of claims 45-47. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claims 45-47.

In regard to claim 52, this claim depends from claim 50 and incorporates the limitations thereof. Therefore, for at least the reasons mentioned in connection with claim 50, Stevens in view of Patel fails to teach or suggest each element of claim 52. In addition, Ayers fail to cure

the deficiencies of Stevens in view of Patel. The Examiner has not cited and the Applicants are unable to discern the portion of Ayers that teaches or suggests the missing elements. Therefore, for at least these reasons, Stevens in view of Patel in further view of Ayers fails to teach or suggest each element of claim 52. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claim 52.

Claim 49 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Stevens in view of Patel, as applied to claim 48, and further in view of U.S. Publication 2001/0007119 to Katayama, et al ("Katayama").

In regard to claim 49, this claim depends from claim 42 and incorporates the limitations thereof. Therefore, for at least the reasons mentioned in connection with claim 42, Stevens in view of Patel fails to teach or suggest each element of claim 49. In addition, Katayama fails to cure the deficiencies of Stevens in view of Patel. The Examiner has not cited and the Applicants are unable to discern the portion of Katayama that teaches or suggests the missing elements. Therefore, for at least these reasons, Stevens in view of Patel in further view of Katayama fails to teach or suggest each element of claim 49. Accordingly, the Applicants respectfully request reconsideration and withdrawal of the rejection of claim 49.


CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 500-4787.

Respectfully submitted,

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